We claim:

1. A contact lens comprising:

a front surface, a back surface and an apex, the lens defining a series of adjacent points at a fixed distance from the apex, the series of adjacent points on the lens having a continuously varying power, the series of adjacent points extending across an arc of at least 120°.

2. The contact lens of claim 1 wherein the front surface is an aspheric surface.

3. The contact lens of claim 1 wherein the back surface is an aspheric surface.

4. The contact lens of claim 1 wherein the series of adjacent points extend across a bottom portion of the lens.

5. The contact lens of claim 4 wherein a second series of adjacent points at a fixed distance from the apex extend across a top portion of the lens, the second series of adjacent points defining a substantially constant power.

6. The contact lens of claim 5 wherein the second series of adjacent points extend across an arc of 180°.

7. The contact lens of claim 6 wherein the top portion has a minimum power and the bottom portion includes a maximum power.

8. The contact lens of claim 1 wherein the series of adjacent points are on a side portion of the lens.

9. The contact lens of claim 8 wherein the lens includes a plurality of predefined regions, each region having a substantially constant power along an arc of points equal distance from a center of the lens.

10. The contact lens of claim 9 wherein the top portion has a minimum power and the bottom portion includes a maximum power.

11. The contact lens of claim 1 wherein the lens has a geometrical center and an optical center, the optical center being offset from the geometrical center.

12. A contact lens comprising:

a front surface and a back surface, one of the front surface and the back surface being an aspheric surface wherein an eccentricity of the aspheric surface varies continuously as a function of the angle φ.

13. The contact lens of claim 12 wherein the eccentricity varies according to the following equation:

$$e(\varphi) = A - B \sin(\varphi) \text{ for } \varphi = 0° \text{ to } 360°$$

where the constants A and B are defined by

$$A = (e_{max} + e_{min})/2 \text{ and } B = (e_{max} - e_{min})/2$$

$$e_{max} = e(270°) = A + B \text{ and } e_{min} = e(90°) = A - B$$

14. The contact lens of claim 13 wherein the aspheric surface is the front surface.

15. The contact lens of claim 14 wherein the aspheric surface is the back surface.

16. A contact lens comprising:

a top portion and a bottom portion, the top portion having a constant eccentricity as a function of the angle φ, the bottom portion having an eccentricity that varies continuously as a function of the angle φ.

17. The contact lens of claim 16 wherein the top portion has an eccentricity to provide a distance correction power and the bottom portion has an eccentricity to provide, in part, a near correction power.

18. The contact lens of claim 17 wherein the near correction power has a maximum correction power where the angle φ is in the range 225°-315°.

19. The contact lens of claim 18 wherein the near correction power has a maximum correction power where the angle φ is 270°.

20. The contact lens of claim 19 wherein the eccentricity of the bottom portion varies by the function:

$$e(\varphi) = A - B \sin(\varphi) \text{ for } \varphi = 180° \text{ to } 360°$$

where the constants A and B are defined by

$$A = e_{min} \text{ and } B = e_{max} - e_{min}$$

$$e_{max} = e(270°) = A + B \text{ and } e_{min} = e(90°) = A$$

21. The contact lens of claim 20 wherein the top portion and the bottom portion are on a back surface.

22. The contact lens of claim 21 wherein the top portion and bottom portion are on a front surface.

23. The contact lens of claim 22 wherein the lens includes a ballast.

24. A contact lens comprising:

a top portion and a bottom portion, and two opposite side portions, the top portion having a first eccentricity along a selected arc, the bottom portion having a second eccentricity different from the first eccentricity along the selected arc and the side portions having an eccentricity that that varies continuously as a function of the angle φ along the selected arc.

25. The contact lens of claim 24 wherein the top portion has an eccentricity that provides a distance correction power and the bottom portion has an eccentricity that provides a near correction power.

26. The contact lens of claim 25 wherein the first side portion is found at $\varphi = 150°$ to $210°$ and the second side portion is found at $\varphi = 330°$ to $360°$ and $0°$ to $30°$.

27. The contact lens of claim 26 wherein the eccentricity of the side portions varies according to the following equations:

$$e(\varphi) = e_{max} - (e_{max} - e_{min})(\varphi + 30°)/60° \quad \text{for } \varphi = 0° \text{ to } 30°$$

$$e(\varphi) = e_{min} + (e_{max} - e_{min})(\varphi - 150°)/60° \quad \text{for } \varphi = 150° \text{ to } 210°$$

$$e(\varphi) = e_{max} - (e_{max} - e_{min})(\varphi - 330°)/60° \quad \text{for } \varphi = 330° \text{ to } 360°$$

28. The contact lens of claim 27 wherein the top portion and the bottom portion are on a front surface.

29. The contact lens of claim 28 wherein the lens includes a prism ballast.

30. A contact lens comprising:

a front surface and a back surface, one of the front surface and the back surface being an aspheric surface wherein an eccentricity of the aspheric surface varies continuously as a function of the angle φ, wherein a near correction power is located between 30°-150° and a distance correction power is located between 210°-330°.